



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/531,612

04/14/2005

Coen theodorus Hubertus Fransiscus Liedenaum

NL 021023

8177

24737

7590

09/04/2007

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

JOSEPH, DENNIS P

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

09/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,612	Applicant(s) LIEDENBAUM ET AL.	
	Examiner Dennis P. Joseph	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/531,612.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to arguments in application No. 10/531,612, filed on August 3, 2007. Claims 1-7 are pending and have been examined.

Claim Rejections – 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-7** rejected under 35 U.S.C. 102(e) as being anticipated by **Cok et al. (US 6,570,584 B1)**

Cok teaches in Claim 1:

A full-colour organic electro-luminescent display device comprising a plurality of independently addressable full-colour pixels (Column 2, Lines 33-34, “digital color image display device, that includes a plurality of pixels, each pixel having a plurality of subpixels.” A full-colour display is indicated by a plurality of sub-pixels within a pixel.), each full-colour pixel (RGBX) comprising four sub-pixels, a red (R), a green (G), a blue (B) (Figure 7 shows the four sub-pixel structure with three of the sub-pixels being red, green and blue), and a fourth sub-pixel (X), characterized in that the fourth sub-pixel (X) emits light of a fourth non-white colour with

Art Unit: 2629

an efficiency higher than the efficiency of each of the R (red), G (green), and B (blue) sub-pixel. (Figure 1 shows the fourth sub-pixel, which is not white, and is used to increase the efficiency of the existing RGB combination. Column 3 Lines 50-53, "Note that the sub-pixels generally vary in their efficiency and the addition of an extra element, either within or without the existing gamut may increase the brightness, and/or lifetime and efficiency of the display." The sub-pixel is added with the desire for improved efficiency over the RGB elements.)

Cok teaches in Claim 2:

A full-colour organic electro-luminescent display device according to claim 1, wherein said non-white colour has colour coordinates outside the colour area defined by the colour coordinates corresponding to light emitted from the RGB sub-pixels. (Column 3, Lines 39-43, "This is shown in the chromaticity diagram in FIG. 3 where the area inside the polygon (that is, the number of colors that can be expressed by the system) is increased due to the addition of another color point 27 not within the existing gamut." Figure 3 shows the point 27 is not within the spectrum of the original RGB sub-pixels.)

Cok teaches in Claim 3:

A full-colour organic electro-luminescent display device according to claim 1, wherein the fourth sub-pixel comprises a polymeric electro-luminescent compound. (Column 5, Lines 22-24, "In a preferred embodiment, the invention is employed in an emissive display that includes Organic Light Emitting Diodes (OLEDs) which are composed of small molecule **polymeric OLEDs.**")

Cok teaches in Claim 4:

A full-colour organic electro-luminescent display device according to claim 3, wherein the polymeric electro-luminescent compound is a poly(phenylene-vinylene). (Examiner takes official notice that a form of p-phenylene vinylene (PPV) is commonly used in polymer EL devices.)

Cok teaches in Claim 5:

A full-colour organic electro-luminescent display device according to claim 1, wherein the non-white colour emitted from the fourth sub-pixel (X) is yellow/green light. (Column 4, Lines 37-41, “The present display device 20 includes sub-pixels that produce colors other than the conventional red, green, and blue colors. A color specification could be written as a combination of the colors available in a specific display device (e.g. red, green, blue, and yellow).” The fourth sub-pixel used can be the color yellow.)

Cok teaches in Claim 6:

A full-colour organic electro-luminescent display device according to claim 1, wherein each full-colour pixel comprises a plurality of subsets of sub-pixels available for emitting light of a desired colour (Column 2, Lines 33-34, “digital color image display device, that includes a plurality of pixels, each pixel having a plurality of subpixels.” A full-colour display is indicated by a plurality of sub-pixels within a pixel.), and the device comprises driving means for selectively addressing the subset among the plurality of subsets which provides the desired

Art Unit: 2629

colour with the highest efficiency. (Figure 1 shows the fourth sub-pixel, which is not white, and is used to increase the efficiency of the existing RGB combination. Column 3 Lines 50-53, "Note that the sub-pixels generally vary in their efficiency and the addition of an extra element, either within or without the existing gamut may increase the brightness, and/or lifetime and **efficiency** of the display." The subset which provides the best efficiency and lifetime is chosen.)

Cok teaches in Claim 7:

A full-colour organic electro-luminescent display device according to claim 1, wherein each full-colour pixel comprises a plurality of subsets of sub-pixels available for emitting light of a desired colour (Column 2, Lines 33-34, "digital color image display device, that includes a plurality of pixels, each pixel having a plurality of subpixels." A full-colour display is indicated by a plurality of sub-pixels within a pixel.), and the device comprises driving means for selectively addressing the subset among the plurality of subsets which provides the desired colour with the longest life time of the sub-pixels. (Figure 1 shows the fourth sub-pixel, which is not white, and is used to increase the efficiency of the existing RGB combination. Column 3 Lines 50-53, "Note that the sub-pixels generally vary in their efficiency and the addition of an extra element, either within or without the existing gamut may increase the brightness, and/or **lifetime** and efficiency of the display." The subset which provides the best efficiency and lifetime is chosen.)

Response to Arguments

4. Applicant's arguments with respect to claim 1 have been considered but are not persuasive.

As for Claim 1, Applicant argues the fourth sub-pixel does not necessarily have a higher efficiency than that of the RGB sub-pixels. However, the claim is broad enough so it can be interpreted as the efficiency at one time, not always, of the non-white sub-pixel would be higher than the others. The prior art teaches of adding the fourth sub-pixel to increase the efficiency. At one time, it will have an efficiency higher than that of the RGB sub-pixels to accomplish its goal.

Inherently, efficiency is based on lifetime. Therefore, the efficiency would decrease over time. Therefore, the efficiency of the non-white would increase the efficiency of the display and be higher than the efficiency of the RGB sub-pixels.

Conclusions

Applicant's arguments were not considered persuasive. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis P. Joseph whose telephone number is 571-270-1459. The examiner can normally be reached on Monday-Friday, 8am-5pm.

Art Unit: 2629

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJ

AMR A. AWAD
SUPERVISORY PATENT EXAMINER
